Algebra 1 Notes – Solving Systems Word Problems

1 At McDonalds, a cheeseburger has 200 fewer calories than a large fries. Two cheeseburgers and a large fries have 1100calories. How many calories are in each item?

Define Variables: Solve:

Write equations:

2 The phone I want at ATT costs $200 and their service will be $50 per month. At Sprint, the same phone is only $50 but their service is $75 per month. How many months would it take for my total out of pocket to be the same at both places?

Define Variables: Solve:

Write equations:

3. At McDonald's, four cheeseburgers and three medium fries have a total of 2290 calories. Six cheeseburgers and two medium fries have a total of 2560 calories. How many calories are in each item?

Define Variables: Solve:

Write equations:

4. Sony made $15 million dollars on 2 million transactions. There were $6 rentals and $15 sales.

Define Variables: Solve:

Write equations:

Problem set 1

Select 3 of the following problems to solve:

1. A McDonald's apple pie has 90 more calories than one of their chocolate chip cookies. Two apple pies and three cookies have a total of 980 calories. How many calories are in each item?

2. The place kicker for the San Diego Chargers scored 120 points in one season. He scored all points on 1-point extra point kicks and 3-point field goal kicks. In that season, he made 12 more extra-point kicks than field goal kicks. How many of each kick did he make?

3. In last week's game against Austin High, Isaiah scored a total of 21 points. He scored all of his points on 2 or 3-point shots and made 3 fewer 3-point shots than 2-point shots. How many of each shot did he make?

4. At Billy's preschool they have bicycles and tricycles with a total of 57 wheels. The number of bicycles is three less than three times the number of tricycles. How many of each are at Billy's preschool?

5. The length of a rectangle is 3 more than its width. The perimeter of the rectangle is 58 cm. What are the dimensions of the rectangle?

Problem set 1

Select 3 of the following problems to solve:

1. A McDonald's apple pie has 90 more calories than one of their chocolate chip cookies. Two apple pies and three cookies have a total of 980 calories. How many calories are in each item?

2. The place kicker for the San Diego Chargers scored 120 points in one season. He scored all points on 1-point extra point kicks and 3-point field goal kicks. In that season, he made 12 more extra-point kicks than field goal kicks. How many of each kick did he make?

3. In last week's game against Austin High, Isaiah scored a total of 21 points. He scored all of his points on 2 or 3-point shots and made 3 fewer 3-point shots than 2-point shots. How many of each shot did he make?

4. At Billy's preschool they have bicycles and tricycles with a total of 57 wheels. The number of bicycles is three less than three times the number of tricycles. How many of each are at Billy's preschool?

5. The length of a rectangle is 3 more than its width. The perimeter of the rectangle is 58 cm. What are the dimensions of the rectangle?

Problem Set 2

Select 3 of the following to solve:

1. A rental car company is running two specials. Customers can pay $30 to rent a compact car for the first day plus $2 for each additional day, or they can rent the same car for $20 the first day and $4 for every additional day beyond that. At what point are the two deals equal?

2. Two friends, Jenny and Blanca, are growing out their hair. They plan to cut it off at a certain point and donate it to a charity that makes wigs for people with cancer. Jenny's hair is already 15 centimeters long and grows at a constant rate of 2 centimeters per month. Blanca's hair is 25 centimeters and growing at a speed of 1 centimeter per month. If the girls get their hair cut on a certain day, they will have exactly the same length to donate. How long will their hair be?

3. Suppose you invest $1500 in equipment to put designs on t-shirts and then buy t-shirts for $3 each. Once you get your shirts designed and ready, you will sell them for $20 each. How many t-shirts must you sell to break even?

4. A friend wants to start an office cleaning service. He spent $315 on equipment and will use $4 worth of supplies on each job. He is planning on charging $25 per office and wants to know how many he must clean before he will see a profit.

5. Jack and Jill are having a race up the hill. Jill gives Jack a 30 second head start because she can run faster. If she runs 6 feet per second and he runs 4 feet per second, how long will it take Jill to catch up to Jack?

Problem Set 2

Select 3 of the following to solve:

1. A rental car company is running two specials. Customers can pay $30 to rent a compact car for the first day plus $2 for each additional day, or they can rent the same car for $20 the first day and $4 for every additional day beyond that. At what point are the two deals equal?

2. Two friends, Jenny and Blanca, are growing out their hair. They plan to cut it off at a certain point and donate it to a charity that makes wigs for people with cancer. Jenny's hair is already 15 centimeters long and grows at a constant rate of 2 centimeters per month. Blanca's hair is 25 centimeters and growing at a speed of 1 centimeter per month. If the girls get their hair cut on a certain day, they will have exactly the same length to donate. How long will their hair be?

3. Suppose you invest $1500 in equipment to put designs on t-shirts and then buy t-shirts for $3 each. Once you get your shits designed and ready, you will sell them for $20 each. How many t-shirts must you sell to break even?

4. A friend wants to start an office cleaning service. He spent $315 on equipment and will use $4 worth of supplies on each job. He is planning on charging $25 per office and wants to know how many he must clean before he will see a profit.

5. Jack and Jill are having a race up the hill. Jill gives Jack a 30 second head start because she can run faster. If she runs 6 feet per second and he runs 4 feet per second, how long will it take Jill to catch up to Jack?

Problem Set 3

Select 4 of the following to solve:

1. One day, Ariana purchased 8 gallons of paint and 3 brushes for $152.50. The next day, she went back and bought 6 gallons of paint and 2 brushes for $113. How much is one gallon of paint? How much is one brush?

2. George bought his kids come clothes last week. One day he bought four shirts and three pairs of pants for $85.50 and on another day he bought three shirts and five pairs of pants for $115. How much did he pay for each shirt? Each pair of pants?

3. Billy's preschool ordered all new bicycles and tricycles. The manufacturer shipped each bicycle/tricycle in it's own separate box and then sent another box full of all the wheels. There are 16 boxes bicycles/tricycles and 45 wheels when they all arrive. How many of each did the preschool order?

4. Abi is buying supplies for her party next weekend. On her first trip to the store, she bought 3 rolls of streamers and 15 party hats for $30. She decided she wants more and went back to buy 2 more rolls of streamers and 4 hats for $11. How much did she spend on each party hat and each roll of streamers?

5. For breakfast yesterday, Jin ate two Egg McMuffins and a hash brown totaling 750 calories and John ate only 1 Egg McMuffin and one hash brown totaling 450 calories. How many calories are in one Egg McMuffin and in one hash brown?

6. On a recent trip to Steak n Shake, Julia spent $19.75 on two steakburgers and three orders of fries. Danielle spent $24 on three steakburgers and two orders of fries. How much is one steakburger? One order of fries?

7. Student Council and Mu Alpha Theta are buying items to donate to the nursing home down the road. The student council bought six cases of juice and one case of bottled water for a total of $115 and Mu Alpha Theta spent $110 on four cases of juice and two cases of water. How much is one case of juice? One case of water?

8. Jesse and her friend Jose are each baking apple pies and tarts for a bake sale, using the same recipes. Jesse baked 4 apple pies and 3 apple tarts, using a total of 42 apples. Jose made 2 apple pies and 3 apple tarts, which used 30 apples. How many apples does each dessert require?

Problem Set 4

Select 5 of the following to solve:

1. On a farm there are 77 animals, all cows and geese. The 77 animals have a total of 200 legs. How many cows and geese are there?

2. At Billy's preschool, there are a total of 25 bicycles and tricycles. There are 57 wheels total. How many bicycles are there? Tricycles?

3. Isaiah and Shafiq and having a three-point shooting competition. For each shot they make, they get 3 points, but for each shot they miss, they lose 5 points. After taking 40 shots, Isaiah has exactly 0 points. How many shots did he make? How many did he miss?

4. Ducal has 20 coins in her piggy bank (all dimes and quarters) that add up to $3.05. How many of each type of coin does she have?

5. James' family bought movie tickets last weekend (some adult and some student). They bought 7 tickets and the total was $72. If adult tickets were $12 and student tickets were $9, how many of each type were purchased?

6. A Honda dealership sells both cars and motorcycles. Last weekend there was a total of 200 vehicles on the lot with 698 wheels. How many cars were on the lot? How many motorcycles?

7. Last season, the kicker for the San Diego Chargers scored a total of 120 points. He earned them with one-point extra point kicks and three-point field goal kicks. If he successfully made 66 total kicks, how many of each type did he make?

8. At Baskin-Robbins, ice cream cones cost $1.10 and sundaes cost $2.35. Saturday, the receipts totaled $294.20 for 172 transactions. How many of each type did they sell?

9. Nothing Bundt Cakes sells bundlettes or $6.99 and regular bundt cakes for $10.99. On their first day open, they sold 36 cakes for a total of $331.64. How many of each kind did they sell?

10. Megan has a coin purse that has only nickels and dimes in it. There are 28 coins with a value of $2.25. How many of each type of coins does Megan have?